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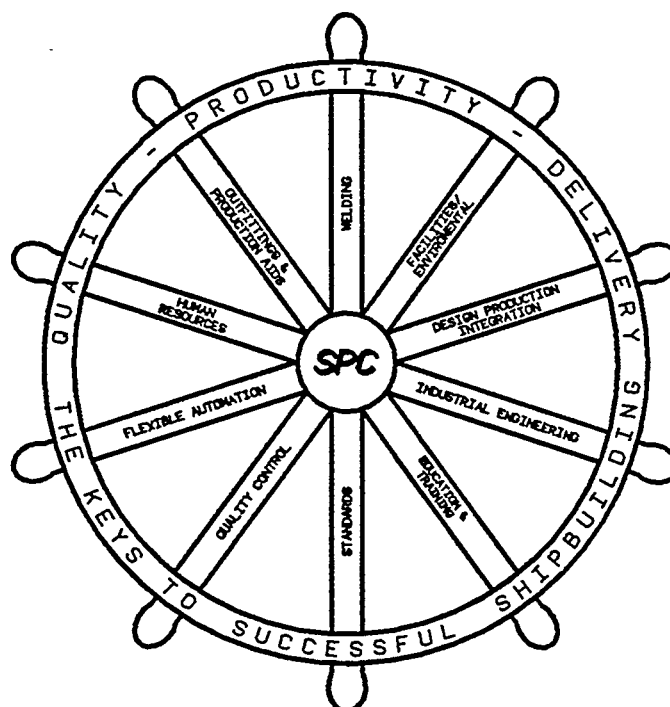
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The Department of the Navy Approach to TQM

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ABSTRACT

The Department of the Navy (DON) has adopted total quality management (TQM) as the principal leadership and management system to achieve mission effectiveness. Adapted for practice by DON personnel, the approach has been called Total Quality Leadership (TQL) in order to emphasize the pivotal role played by leaders. The purpose of this paper is to describe TQL and the approach used for implementation.

The central thesis of the paper is that the change to TQL is transformational in nature. Transformational changes require a planning approach that is sensitive to the systemic effects of organizational changes. **Strategic** change management (SCM) is described as the methodology for achieving this change in the DON. The rationale for SCM is described and the resulting implementation approach is evaluated.

CORNERSTONES AND BASIC CONCEPTS OF TOTAL QUALITY LEADERSHIP

Total Quality Leadership is defined as "the application of quantitative methods and the knowledge of people to assess and improve (a) materials and services supplied to DON organizations, (b) all of the significant processes within organizations, and (c) meeting the needs of the end user, now and in the future (1)."

The purpose of this paper is to describe TQL and to indicate how it is being

implemented in the Department of the Navy. A brief history of TQL in the DON is described by Walton (2).

The Five Cornerstones of Total Quality Leadership

Definition of total quality leadership. The definition of TQL provides a description of the operations required to practice TQL (application of quantitative methods and knowledge of people to assess and improve), the breadth of the effort (all "significant" processes performed by the organization) and the time horizon (now and in the future).

In practical terms, the practice of TQL requires that managers identify and improve all of the organizational processes that have a significant impact on mission performance. The process orientation usually requires that non-management personnel be enlisted to (a) identify how the processes are actually performed, and (b) use their process knowledge in the improvement effort. TQL also requires that objective measurements of process performance be used as the basis for understanding and taking action on processes, as well as evaluating the effects of process changes.

For operational units, clear criteria for mission effectiveness must be developed, as they are surrogates for customer requirements. Organizations serving operational units are to develop their criteria based upon the quality requirements of their customers in the operational units. Once the quality criteria are established, the TQL effort

is directed at optimizing organizational performance to achieve these criteria in the most economical way acceptable to their customers.

The Deming philosophy provides the theoretical basis for TQL. Based upon the theory of profound knowledge, it has empirical roots in (a) the mathematical basis for quality improvement, (b) the application of systems theory to quality management, (c) the psychology of teamwork and leadership of change, and (d) the use of the scientific method as the basis for determining the causes and effects of quality (3).

Department of the Navy implementation approach. Due to the high levels of turnover among military commanders, the approach to implementation takes place in two phases. The first phase consists of establishing continuous quality improvement as the principal management practice in DON organizations. The second phase, usually undertaken by succeeding commanding officers, is establishment of a system for the practice of strategic change management. This latter capability is primarily intended to deal with the systemic changes arising from the impacts of continuous quality improvement. The second part of this paper will deal with this approach in detail.

Management structure for TQL. Each DON organization is to have a steering committee that is responsible for implementation. The steering committee is linked internally to line and staff teams that are specifically chartered to improve all mission-essential processes. The steering committee is also linked externally through the commanding officer to higher levels in the chain of command that (typically) are more responsible for the long term, systemic changes required during the second phase of implementation.

A scientific approach to quality improvement. Quality improvements are undertaken within a data-based systems context. In this approach, the processes important to mission capability are identified, stabilized, and improved using a disciplined procedure based upon the scientific method (4). These planned changes are based upon top-down priorities, coupled with an assessment of the systemic impacts of the improvements. The benefits of this approach are (a) optimal mission performance, and (b) minimal cost.

Basic Concepts of TQL

The meaning of "customer." The DON is divided into two categories: "providers" (administrative) and "combatant forces" (operational). For the DON as a whole, the operational forces are regarded as the customer of the providers or administrative members of the DON. It is the quality requirements of the operational forces that must be known and exceeded by the providers of goods and services. For any given organization within the DON, there are both internal and external customers. Those "internal" are members of a command providing a product or service to others within their command. Those "external" are the recipients of the product or service outside of their command. As was indicated above, the most significant customer, sometimes referred to as the "end user," is the sailor or marine that provides primary defense (1).

The "extended system." Quality is judged by the customer, consumer, or end-user of a product or service. That judgment is the response to a quality characteristic produced by a series of service or production processes that can be traced backwards through the producing organization, and into the supply base of the producing organization. This is referred to as the "extended system,"

and is considered the basic unit for continuous quality improvement.

Management's "new" job. Process improvement, based upon measurement and analysis of process variation and the actions required to improve processes through reduced variation, has not historically been the job of management. TQL requires that all leaders and managers use this new approach to quality management, and that it be made a requirement for satisfactory job performance.

Organizational transformation. Process improvement on an organization-wide basis is a fundamental change in the technical system of the organization. Such change inevitably impacts the political and cultural systems of the organization as well, and can not be successful unless all three systems are brought into alignment. It is the optimal performance of this total system that is referred to as organizational transformation.

Strategic change management. The process used to achieve organizational transformation is strategic change management (5). The goal of strategic change management is optimization of mission effectiveness through alignment of the organization's technical, political, and cultural systems. Such alignment is difficult due to the size and complexity of the DON. As a result of this, authority for making changes in the technical subsystem is delegated to the unit level. Changes in the political and cultural subsystems are primarily the responsibility of organizations at higher echelons.

Unit-level implementation. Continuous quality improvement is to be established as an organizational practice by all commanding officers in the Department of the Navy. Impediments to this practice that

are beyond the control of a commanding officer are to be addressed through the chain of command. They are addressed at the appropriate level by those in authority using the strategic change management methodology.

Change is managed top-down. Due to the systemic impacts of changes in organization systems, quality improvement efforts are managed top-down. This is done to avoid suboptimization, preserve the chain of command, and avoid the false starts commonly associated with bottom-up efforts. This does not preclude participation by those lower in the organizational structure. Rather, it simply emphasizes the fact that TQL is a management system, not an employee involvement program.

TQL team structure. Continuous quality improvement is largely team based. By definition, extended processes require cross-functional management teams (QMBs). Such teams are more successful for achieving system optimization, and also make more efficient use of resources (time). Improvements within functions (PATs) also require management to ensure efficiency of resources, optimization of improvements, and avoidance of false starts.

Chain of command. Changes in systems and processes, and the attendant expenditure of resources, are managed through the existing chain of command. The TQL team structure provides a horizontal integration of the chain of command that reflects process ownership. No new organizational structures are required for the practice of TQL, as long as authority to act on process improvements is delegated to the process owners working as a team.

Shared leadership. Improvement means change, and change requires

leadership. It is the fundamental responsibility of the commanding officer to develop a capability for the continuous improvement of all mission-essential processes. In order to do this, s/he must develop a "critical mass" of leaders who will lead quality improvement efforts (3).

Process improvement. Processes are improved when they (a) are less variable, (b) increase value to the customer, and (c) contribute to optimization of a system. These requirements cannot be met by problem solving alone, although the solution typically begins that way. Following initial efforts to stabilize process performance, TQL process improvement methodology focuses on identification and removal of the causes of unwanted variation. Such an approach does not depend upon the existence of a problem--but does rely upon a commitment to continuous process improvement (4).

STRATEGIC CHANGE MANAGEMENT AND TRANSFORMATION TO TQL

Strategic change is defined as a change "of great importance within an integrated whole or to a planned effect (6)." The "integrated whole" is the Department of the Navy. The "planned effect" is optimal mission effectiveness achieved through the practice of TQL. This use of "strategic" is quite dissimilar from the military concept of the term. In the context of leadership it simply means an important change in strategy. The new strategy is TQL. Moving from the current management system, where quality is inspection based, to the practice of TQL is a strategic change. It is also transformational.

The nature of transformational change. Transformational change is like metamorphosis--going from caterpillars to butterflies. It is not linear change, it is discontinuous and non-incremental in nature. Metz (7) has described the requirements of such change as:

"A comprehensive, long term horizontally and vertically linked strategy needs to be developed. (It) will have to cover the entire organization with all its systems and procedures, and will need to be incorporated into the overall business strategy. Long term improvements will not be accomplished without *permanent changes in the level of employee involvement; without changes in points of authority, responsibility, and decision making; without changes in management philosophies, styles, and relations and without changes in climate and culture.*" (italics mine).

For an organization as large and complex as the DON, the kind of change described by Metz must be planned and managed to take into account the diversity of organizational cultures that make it up. At a minimum, the various cultures include the three Navy communities, (air, surface, submarine) the Marine Corps, the civil service, and, perhaps, women in the DON.

Metz observed that most efforts at implementing transformational change go through three evolutionary steps. He refers to these as Type I, II, and III, with the third type being transformational. The extent of change, moving from Type I to III, does not appear to be linear. Rather, it seems exponential, especially as it applies to (a) teamwork and (b) management and employee involvement, i.e., the "people" dimension.

Deming (3) has asserted that there is clear evidence that much of the western world is in an impending crisis, and that an organization must transform more rapidly than the evolution described by Metz. He points out that most efforts at programmatic change (Metz's Type I--as typified by quality circles) result in little more than "false starts."

What emerges from the thinking of these and other writers (8) & (9) is that all three major organizational systems that must be changed: the technical. the cultural. and the political. In addition, what is needed is *planned* change, but not in the formal sense

typically associated with business planning. Rather, what is required is *an adaptive strategy for planning and implementing change* that reflects the variations in size, complexity, and cultures of the Department of the Navy.

A Theory of Transformational Change

Rational approaches to transformational change have been described in the area of management known as Organization Development (OD). OD is an emerging discipline directed at helping organizations manage such change more effectively (10). Of particular relevance to the DON is the OD methodology known as strategic change management (5). *Strategic change management (SCM) is a scientific methodology for achieving transformational change based upon the systems theory of organizations.* Strategic change management is the “adaptive strategy for planning and implementing change” mentioned above, and the answer to Metz’s entreaty for a comprehensive, long term strategy incorporated into the overall business strategy, also mentioned.

The relevance of SCM is derived from the fact that this methodology pays specific attention to the three primary systems of organizations: technical, political, and cultural, that have evolved to deal with three basic problems of organizational life.

The first problem is that of productivity. That is, in the present era of budget cuts and downsizing, the technical system (methods, manpower, machines, material) must be rearranged in the most efficient manner. The method for doing this is process improvement, beginning with simplification and elimination of waste, and continuing with iterative improvements based upon reduction of variation (4).

The second problem has to do with the distribution of decision-making authority, particularly as it applies to resources. This is related to how power is distributed in the organization, i.e., the political system. Effective transformation to TQL makes necessary the reallocation of authority in order

to improve processes. The sheer magnitude of changes involved in process improvement will require that decision-making be pushed to the lowest level possible. This will change the knowledge, skill, and ability levels of many jobs, and the systems of compensation and reward that support those jobs.

The third problem has to do with “glue” that holds organizations together, the cultural system. In this time of drastic change, top leaders must decide the content of the organization’s culture: which values are to be shared and taught, and what beliefs and actions are required of the members of the organization to support the values. Having decided these, top leaders must communicate them in a memorable and believable fashion which will not be quickly dismissed as “just another program.” The value of central concern to TQL is the quality of products and services.

SCM involves keeping the three systems balanced or aligned. According to the theory, *alignment of these systems in the context of continuous quality improvement leads to optimal organizational performance.* Tichy presents three basic sets of *managerial* tools for aligning the three systems:

- (a) the mission and strategy of the organization;
- (b) its structure, including administrative procedures, and
- (c) human resource management practices. These tools can be used to modify or adjust any or all of the three systems.

The Strategic Change Management Matrix

Figure 1 depicts the SCM concept. The entries in the matrix represent the strategies undertaken to establish or maintain alignment of the three organizational systems. The matrix will be briefly described here (specific illustrations depend upon organizational context--this is what was meant by “adaptive” earlier). The remainder of this section of the paper will describe some strategies associated with the technical row and the human resource management column of the matrix. No attempt will be made to describe the details of the DON approach in a single matrix.

However, general applications for the DON will be described in a subsequent paper. (Those familiar with Deming's 14 obligations of management could readily put those strategies in this matrix).

	Mission and Organizational Human Resource		
	Strategy	Structure	Management
Technical System			
Political System			
Cultural System			

Fig. 1 A Matrix of Actions Required to Apply Strategic Change Tools to Organizational Systems

The technical system (the first row in the matrix) is concerned with reducing or more effectively organizing the organization's personnel, technology, material, and financial resources to produce a desired outcome--improved product or service quality, in this case. The first managerial tool used to adjust the technical system involves the mission and strategy of the organization. The mission fits the organization's resources to the environment. It is defined first by assessing the environmental threats and opportunities facing the organization. Then, the organization's strengths and weaknesses are identified. A mission is chosen which best links the organization's strengths to environmental opportunities. Finally, a strategy is worked out for how the organization's resources will fit together to achieve the mission.

The second managerial tool which can be applied to the technical system involves organizational structure. Given the process improvement focus of TQL, the objective is to structure management teams to correspond with the flow of processes. If the organization is functionally aligned, this will result in a matrix--maintaining the chain of command while incorporating cross-functional teams.

The human resource management system is the third tool for adjusting the technical system. It involves fitting people into jobs or roles and devising methods for measuring and improving their performance. Prominent among these roles are team leader and team member. Principal actions here involve training for new role requirements, as well as career planning for longer term job progression in team leadership.

Human resource management (third column in the matrix) can also be discussed as a tool that applies across the technical, political, and cultural systems. As indicated above, it concerns fitting people to jobs, specifying and measuring performances, and staffing and development when applied to the technical system. These tasks are concerned with linking the organization's social resources to its technical resources so the production system can operate effectively.

When applied to the political system, human resource management is more involved with social power than simply with production. It includes succession politics--who gets ahead and how they do it. For example, in an aviation depot, the path to power might indirectly through engineering rather through the production department. There are also political human resource issues related to reward and appraisal systems. Organizations must decide who gets what rewards and how, they must choose by whom and by what criteria employees are appraised. These issues frequently pose difficult dilemmas because the political aspects of human resource management can conflict with the technical aspects.

The application of human resource management to the cultural system is more concerned with organizational values than with social power or production efficiency. Major attention is directed toward selecting, developing, and rewarding people to shape and reinforce a particular culture. In the DON, an emphasis on culture could result in attempts to select and retain members whose personal values fit well with the Navy or Marine Corps of the future. Alternatively, attempts to socialize or redevelop appropriate

values can be effected through training or changes in the appraisal and reward systems.

In summary, the essence of the SCM approach to transformation is through application of three change tools to each of the three organizational subsystems. This would generate as many as nine change strategies for improvement of the organization. The particular strategies employed depend upon an assessment of the internal and external environments of the organization. In using the matrix, leaders must recognize that the organization (at whatever level) is not static--and the appropriate strategies in the matrix require continual attention and adjustment. Therefore, transformation must be viewed as an ongoing process rather than an end state.

Adapting Strategic Change Management to the DON.

Top leadership must apply three steps to change an organization from its present condition to one that is transformed. First, envision the future state of the organization with its loosely coupled technical, political, and cultural systems aligned (for total quality). Second, uncouple the three systems and seek to change each separately. (For practical purposes "uncoupling" means that leaders and managers are given additional time and resources to begin process improvements.) Third, recouple the three improved systems. Recoupling would occur when the practice of process improvement becomes an integral part of a manager's job. An example of recoupling on the power dimension is that changes in appraisal and award systems would become connected with process improvement activities.

These three steps have been adapted as an approach for implementation of the "total quality" concept in the Department of the Navy (11). However, due to the size, complexity, and variation in organizational cultures in the DON, it has not been possible to treat it as a single organization with regard to the three steps to change. In order to accommodate these issues, authority for transformational changes was delegated as follows:

(a) responsibility for process improvement (mainly changes in the technical system) was delegated to the individual command

(b) changes in political and cultural systems that have no impact outside the individual command are to be made by the individual command, and

(c) responsibility for changes in political and cultural systems that have systemic impacts outside the individual command must be surfaced through the chain of command.

The practical effects of the rules of delegation are:

(a) for most DON organizations, developing a vision is largely restricted to their understanding of the effects of process improvement on organizational functioning (12),

(b) uncoupling and improving the technical system can take place at all levels in the chain of command, but uncoupling and improving of the political and cultural systems is largely a responsibility of headquarters-level organizations (13) and

(c) redesign and recoupling of the political and cultural systems are primarily a headquarters responsibility (14).

Implementation in Two Phases.

Considering the above, transformation to TQL involves two sets of activities. The first--and primary for most DON organizations--is to begin the practice of continuous quality improvement through redesign of the technical system (i.e., all significant organizational processes) in every DON organization. The second--and more typical of headquarters organizations--is transformation of the political and cultural systems to support continuous quality improvement.

Figure 2 describes, for a hypothetical organization, how these two sets of activities might take place. The diagram presents a block of time representing the total time spent by management on quality improvement. The vertical axis represents the levels of management in an organization. The horizontal axis presents time intervals--which are not necessarily fixed--allowing flexibility for the myriad of DON organizations.

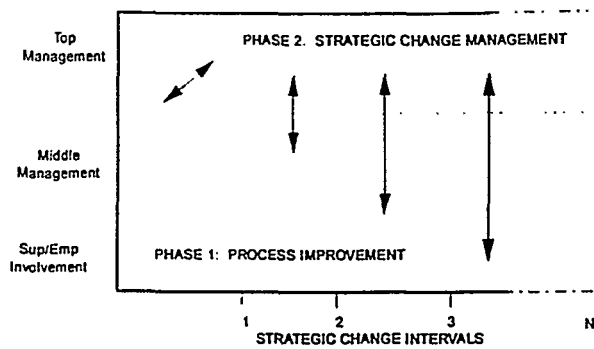


Fig 2 The DON Two-Phase Approach to Implementing TQL

The diagram indicates that, initially at least, most time is spent on establishing and practicing continuous process improvement, i.e., establishing the ability to make continuous changes in the technical system. Then, as time goes by, top management attention becomes more focused on managing changes in the political and cultural systems. The bi-directional arrows are to indicate that these changes interact systemically.

Experience has shown that it is important for top management to be involved with Phase 1 of implementation. This is important for two reasons: (a) continuous process improvement requires visible and involved leadership and elements of it cannot be delegated, and (b) top management may not be able to form a vision of the political and cultural impacts of TQL if they do not participate in the practice of process improvement. Given these two facts, it would not be appropriate for top management to delegate Phase 1 activities and simply concentrate on SCM.

Implementation and Management is Top-Down. There are several reasons for why the technical system changes should come first and why changes in the political and cultural systems are designed and implemented top-down within the DON. Changes in the technical system are undertaken initially because of the need to increase the efficiency and effectiveness of naval organizations. This has been due to the massive reductions in defense funding as a result of the federal deficit and reduction of the Soviet threat. Process improvement was viewed as a way to maintain the integrity of the DON - mission while simultaneously reducing the cost of operations.

Changing the technical system also "triggers" changes in the political and cultural systems. In other words, process improvements require modification in points of authority for decision making, and involves more employee involvement than currently exists. If these changes are consistently reinforced by the political system, and appropriate rewards and appraisal mechanisms are put into place, the culture of the organization will also begin to change.

Because effective implementation requires that power be shared, it makes sense that the overall effort must be top-down. Changes in power, as well as changes required in the appraisal and rewards systems, can't realistically *come* from lower in the organization (without revolution). As a result, planning and execution of changes in power and culture are a top management responsibility. (Changes in politics and culture need not necessarily be driven by process improvement, but Total Quality Leadership cannot be fully achieved without realignment of the political and cultural systems.)

Several other reasons for a top-down approach are important for consideration.

(a) People at the top are in a better position to ensure that the various process improvement efforts are orchestrated in such a way as to avoid suboptimization. That is to say, they are in organizational positions that can ensure that the efforts complement one another in support of organizational goals.

(b) It is more likely that the improvements undertaken will be important to the mission of the organization if they are directed top-down.

(c) The procedures for process improvement are fundamentally the same whether the process is one of great importance to the organization or one that is relatively inconsequential. Sometimes, if not directed otherwise, managers will undertake these latter efforts in order to minimize risk under the assumption that an unimportant process is actually less risky. But, that depends on how you define failure. If it takes 3,000 man-hours of effort to improve a process that is unrelated to the mission, then you have probably wasted 3,000 hours.

(d) A top-down approach fosters a sense of process ownership. In bureaucratic organizations there is an overwhelming tendency to want to “kick it upstairs” when the need for change is discovered (15). This appears to be due to a fear of accountability, rather than a need to coordinate action on a change. However, the effectiveness of change is greatly dependent on the degree of ownership of what is being changed (16) & (17). In TQL, ownership is determined *a priori* as a part of the team chartering process. In other words, when management decides what process they want to change, they use a deployment flow chart to determine membership on the teams. Through the same process, authority to act is delegated. Although it might be argued that a sense of ownership could better be established using a “bottom-up” approach, the abysmal failure of quality circles in the Department of Defense argues against that approach (18).

The DON Hierarchy and Responsibility for Transformation. The ability to make permanent changes to the political and cultural systems resides high in the DON chain of command. For that reason, transformational activities related to these systems should be addressed there. Thus, the proportion of time spent on changes to the political and cultural systems in headquarters organizations should be greater than, say, in an operational unit such as a submarine. Conversely, almost all of the time spent on quality improvement in a submarine would be focused on the continuous, day-to-day improvement of processes. So, if Figure 2 was drawn for a submarine, most of the temporal space would consist of Phase 1. For a HQS policy organization, the opposite might be true.

Due to the above, only higher echelon organizations in the DON should be concerned with strategic change management. The other 95%+ organizations should be almost wholly concerned with identifying and improving the processes that are important to the mission of the organization. There could easily be hundreds of such processes, so each organization will have to perform a prioritization analysis and apply their resources accordingly. Eventually these

organizations will be affected by the deployment of changes emanating from their headquarters-level organizations. These changes should support the ongoing efforts at improving quality organization-wide.

Current Status and Assessment of the DON Approach

Status of implementation. TQL began as a grass roots effort in the early

By 1988, it had become broadly embraced by the DON shore establishment primarily in the shipyards, aviation depots, and supply centers where the “customer” was quite clearly the sailors and marines in the operational Navy and Marine Corps. During this period the two-phase implementation approach was being researched and developed under the sponsorship of the Naval Aviation Systems Command. Early in 1989 the Undersecretary of the Navy assumed the leadership for TQL implementation. He formed the Executive Steering Group (ESG) and began an education process with those senior executives.

In June 1991, the Secretary of the Navy published a white paper on the subject of TQL implementation (1). Subsequently, the ESG developed and published strategic guidance related to the practice of quality (19). Neither of these publications have been published in the form of administrative policy nor implementation instructions.

Three organizations have been created to facilitate implementation of TQL. The Total Quality Leadership Office, staffed to the Undersecretary, was created to assist him and the ESG in all matters related to TQL implementation. The Director of that office is in the Senior Executive Service and is the personal advisor to the Undersecretary, as well as the Chief of *Naval Operations*. The CNO Fleet teams are two groups that were created for the purpose of assisting operational commands to develop process improvement efforts. Finally, TQL training has been established at the amphibious schools located at Little Creek (VA) and Coronado (CA). The staff of about 70 teach the six basic TQL courses and do some consulting with local commands.

Considerable progress has been made with regard to top-level support and involvement. However, the current level of involvement is considerably less since the change in administrations. The absence of a leader at the Secretary or Undersecretary level has served to put implementation in something of a limbo state. The monthly meetings of the ESG (now known as the DON Review Commission) have been discontinued.

The current situation has been exacerbated by the lack of policy guidance and implementing instructions. TQL is still generally regarded as something we "should" do, but line management has not been required to practice it. While it cannot be assumed that written guidance is sufficient, in the absence of visible leadership it may well be necessary.

Assessment of the DON approach. The real strengths of the DON approach are (a) adoption of the Deming/Shewhart quantitative approach and (b) delegation of authority to use this approach to the individual commands. A world-class training and training support program has been established to support these two features of TQL.

What is seriously absent from the DON approach is knowledge of, and commitment to, organizational transformation. As a result, numerous organizations have leaped headlong into strategic planning in the absence of an understanding of the organizational implications of TQL. Consequently, they develop strategic business plans (at best) believing that strategic planning, in and of itself, will lead to total quality. This mean-ends confusion (equating strategic planning with transformation to TQL) is similar to an earlier one that equated the use of statistics with process improvement.

The root of this problem is the failure to recognize TQL as a transformational change or a "paradigm shift," as it has become popularized. With the notable exception of those in the TQL Office, and a few students of organization development, there is little understanding that the word "total" implies much more than improvement in the quality of the products and services. Without a full appreciation of the need to change the culture

and political structures--by those who can make these changes--it is quite likely that the phenomenal beginning of the quality revolution in government will suffer a "false start" *similar to* that of quality circles in the 1970s.

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